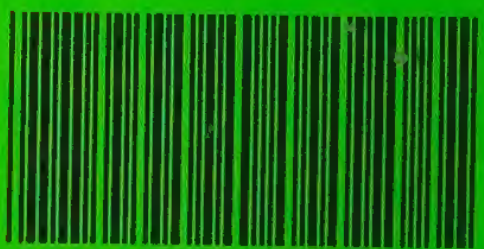
TRIPLETT

Instruction Manual
Model 625-NA
Volt-Ohm-Mil-Ammeter

MP MASTER



MA26293

TRIPLETT

Operating Instructions for 625-NA Volt-Ohm-Mil-Ammeter

GENERAL DESCRIPTION

The Model 625-NA Volt-Ohm-Mil-Ammeter is a long scale multi-range instrument in a compact portable case. It provides the ranges commonly used in servicing radio receivers as well as those used in the experimental laboratory or at a radio transmitting station.

The selection of all ranges except 5000V is obtained by rotating the two bar knobs on the front of the panel. The Selector Switch knob is on the left side of panel. The 5000 AC or DC volt ranges require changing jack connections in addition to setting the switches. The red jacks are the positive leads for DC, and the "COM" is always negative.

Triplett Model 625-NA Volt-Ohm-Mil-Ammeter is completely self contained with the following ranges:

DC Volts 0-1.25-5-25-125-500-2500
at 20,000 ohms/Volt

DC Volts 0-2.5-10-50-250-1000-5000
at 10,000 ohms/Volt

AC Volts 0-2.5-10-50-250-1000-5000
at 10,000 ohms/Volt

DC Milliamperes 0-1-10-100-1000
at 250 Mv.

DC Microamperes 0-50 at 250 Mv.

DC Amperes 0-10 at 250 Mv.

Ohms 0-2000-200,000

Megohms 0-40

Output Volts 0-2.5-10-50-250-1000-5000 AC
at 10,000 ohms/Volt

Decibels —30 to + 3, 15, 29, 43, 55, 69
on 500 ohm line

ACCESSORIES

One battery 1.5 Volt and one 15 volt battery are provided for the ohmmeter circuit. These batteries may be easily replaced by removing the six scrws holding the panel. When the ohmmeter circuit can no longer be adjusted by means of the

variable resistance on the panel, replace the 1.5V battery with Eveready No. 935 or its equivalent, and the 15V battery with Eveready No. 411 or its equivalent.

Two connecting leads each 4 ft. long are provided for connecting to the jacks of the tester. For utmost safety, do not touch these leads when they are connected to a high voltage supply.

Two alligator clips are provided for fastening to the end of the test prods to make clip-on connections.

CAUTION

For Maximum Safety Do Not Handle Tester or Leads When Connected to High Voltages.

TESTER POSITION: Operate in a horizontal position for greatest accuracy.

HANDLING: Do not drop or severely jar the tester, as the pivots, jewels or moving element may be damaged.

POINTER SETTING: Be sure instrument pointer is on zero before taking any readings. The pointer may be set on zero by turning the bakelite screw just above the "OHMS ADJ."

HIGH VOLTAGE MEASUREMENTS: Exercise extreme caution. Make connections only

with apparatus turned off. Make certain that no condensers are charged to a high voltage, such as filter condensers or power packs. Make certain switch is on 1000-5000V position.

MILLIAMPERE MEASUREMENTS: Do not test directly across any potential circuits when on milliampere ranges as this may burn out the instrument and shunt.

RESISTANCE MEASUREMENTS: Under no condition apply voltage between leads when on ohmmeter position as the instrument will thereby be overloaded and damaged.

OPERATION

GENERAL:

Set switches, connect to jacks and read on scale as called for in the Operation Chart.

In choosing ranges for measuring always endeavor to have the readings fall in the upper, or right hand, half of the scale for greatest accuracy. Thus, a slight error in noting the exact division on the scale will be a smaller per cent of the true reading than if the same degree of error were made in the lower portion of the scale.

AC-DC VOLTS—DC MA.

Follow Operation Chart as noted. AC voltage ranges are calibrated on a 60 cycle sine wave supply at a room temperature of 77°F. The upper frequency limit for the various ranges is as follows: 20,000 cycles for "2.5V", 5000 cycles for "10V" and "50V", 2000 cycles for "250V", and 200 cycles for "1000V" and "5000V".

OHMS

Connect test leads together and adjust "OHMS ADJ." for full scale deflection before measuring ohms. This ohms control adjusts for variations in voltage of the self-contained batteries. The "K" on the dial designates 1000. Follow the Operation Chart as noted.

Condensers may be checked for shorts or leakage resistance with the ohm ranges. *Discharge Condensers Before Making Test.* The tests are made at 1.5 volts on the "2K" and "200K" ohm ranges, and at 15 volts on the "40 MEG" range.

To extend the ohm range from 0-40 megohms to 0-400 megohms, connect a 150 volt battery and a 2.2 megohm resistor in series with one of the test leads. Figure 1. Set Range switch to "40 MEG", adjust ohms control and read on 0-40 megohm scale multiplied by 10.

DECIBELS

Follow the Operation Chart as noted. Values are based on 6 mw, at 0 DB on a 500 ohm line. If there is DC present, it will be blocked by a self-contained 0-1 mfd. 600 volt condenser in series with the "Com" jack.

AMPERES

For 0-10 Amp DC, see Operation Chart.

Triplett external 250 Millivolt plug-in shunts are not supplied with the tester but may be obtained to special order. To use these shunts, plug the desired shunt into the "Com" and the "V-O-MA-A" jacks and set the range switch on the 10 Ma. position. Connect the test leads or the line to be measured to the binding posts on the shunt.

MICROFARADS

Set right hand Selector Switch to "ACV" and connect a 0.5 mfd. condenser across the "Com" and the "V-O-MA-A" jacks. Connect this combination in series with the unknown condenser and a 110 volt 60 cycle line as shown in Figure 2. Read capacitance as noted below on the 0-10 "ACV" scale.

CAUTION: This test is for paper condensers only!

TO MEASURE MFD.	SET LEFT HAND RANGE SWITCH TO	DEFLECTION ON RED 0-10 "ACV" SCALE
.002	2.5V	1.65
.004		3.05
.006		4.65
.008		6.15
.010		7.80
.012		9.60
.020	10.0V	4.50
.04		7.80
.05		9.90
.08	50V	3.00
0.10		3.70
0.2		6.30
0.4		9.60
0.6	250V	2.45
0.8		2.70
1.0		2.95
2.0		3.50
4.0		3.90
6.0		4.10
10.0		4.25

TO MEASURE	SET RIGHT HAND SELECTOR SWITCH TO	SET LEFT HAND RANGE SWITCH TO
10,000Ω/V		
0-2.5 Volts DC	ΩMA-A DCV 10,000Ω/V	2.5 V
0-10 Volts DC		10 V
0-50 Volts DC		50 V
0-250 Volts DC		250 V
0-1000 Volts DC		1000-5000 V
0-5000 Volts DC		1000-5000 V
20,000Ω/V		
0-1.25 Volts DC	DCV÷2 20,000Ω/V	2.5 V
0-5 Volts DC		10 V
0-25 Volts DC		50 V
0-125 Volts DC		250 V
0-500 Volts DC		1000-5000 V
0-2500 Volts DC		1000-5000 V
10,000Ω/V		
0-2.5 Volts AC	ACV	2.5 V
0-10 Volts AC		10 V
0-50 Volts AC		50 V
0-250 Volts AC		250 V
0-1000 Volts AC		1000-5000 V
0-5000 Volts AC		1000-5000 V
0-50 UA DC	ΩMA-A DCV 10,000Ω/V	50 UA
0-1 MA DC		1 MA
0-10 MA-DC		10 MA
0-100 MA DC		100 MA
0-1000 MA DC		1000 MA
0-10 Amps DC		10 Amps
0-2000 Ohms	ΩMA-A DCV 10,000Ω/V	2K
0-200,000 Ohms		200K
0-40 Megohms		40 Meg
—30 to +3 DB	Output	2.5 V
—18 to +15 DB		10 V
—4 to +29 DB		50 V
+10 to +43 DB		250 V
+22 to +55 DB		1000 V
+36 to +69 DB		5000 V

CHART

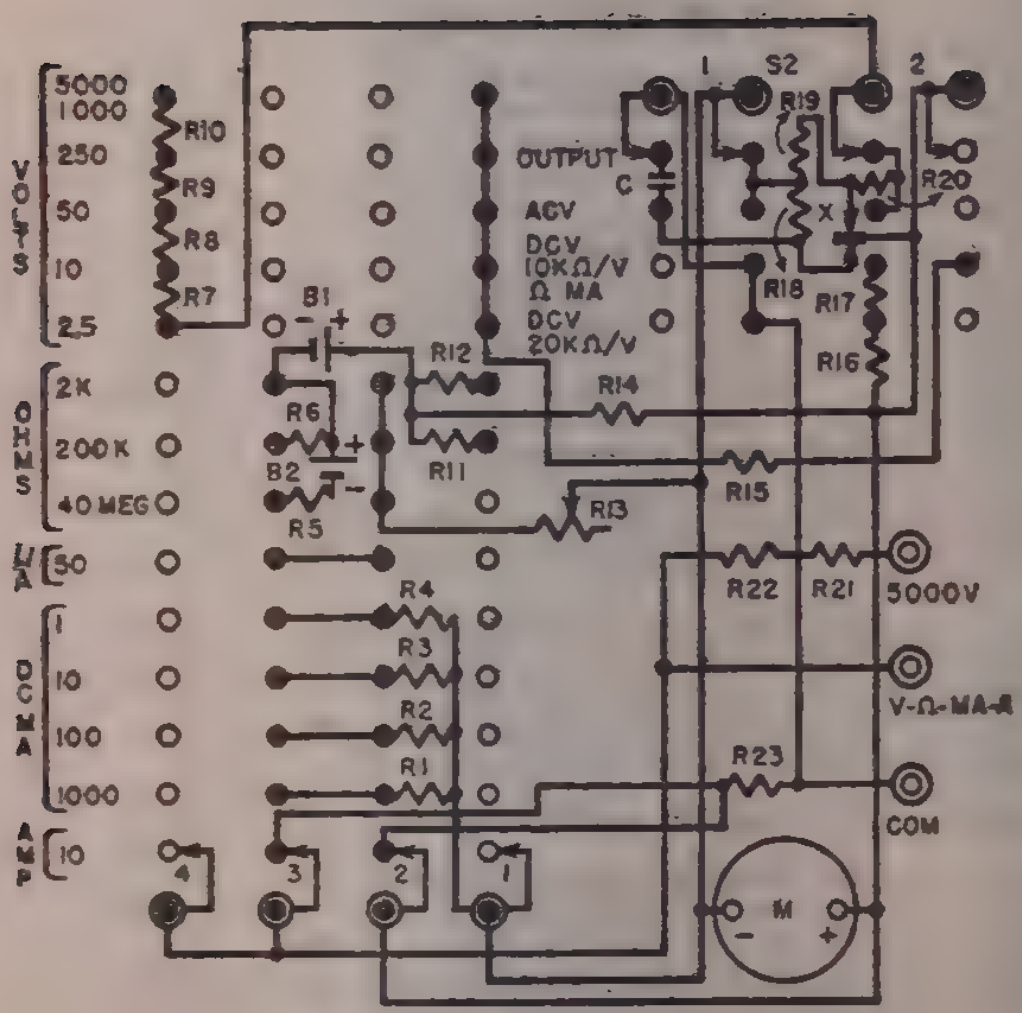
E CK K	USE RED JACK	READ ON		EACH SCALE DIV. EQUALS	
		BLACK SCALE			
		0-250	DC÷100	0.025	Volt
		0-10	DC×1	0.10	Volt
Com	V-O-MA-A	0-50	DC×1	0.5	Volt
		0-25	DC×1	2.5	Volts
		0-10	DC×100	10	Volts
Com	5000V	0-10	DC×500	50	Volts
		BLACK SCALE			
		0-250	DC÷200	0.0125	Volt
		0-50	DC÷10	0.05	Volt
Com	V-O-MA-A	0-250	DC÷10	0.025	Volt
		0-250	DC÷2	1.25	Volt
		0-50	DC×10	5	Volts
Com	5000V	0-250	DC×10	25	Volts
		RED SCALE			
		0-250	AC÷100	0.025	Volt
Com	V-O-MA-A	0-10	AC×1	0.10	Volt
		0-50	AC×1	0.5	Volt
		0-250	AC×1	2.5	Volts
		0-10	AC×100	10	Volts
Com	5000V	0-50	AC×100	50	Volts
		BLACK SCALE			
		0-50	DC×1	0.5	UA
Com	V-O-MA-A	0-10	DC÷10	0.01	MA
		0-10	DC×1	0.10	MA
		0-10	DC×10	1.0	MA
		0-10	DC×100	10	MA
		0-10	DC×1	0.10	Amps
Com	V-O-MA-A	**GREEN SCALE**			
		0-2K ohms×1			
		0-200K ohms×1			
		0-40 Megohms×1			
		BLACK SCALE			
Com	V-O-MA-A	—30 to +3 DB plus 0			
		—30 to +3 DB plus 12			
		—30 to +3 DB plus 26			
		—30 to +3 DB plus 40			
Com	5000V	—30 to +3 DB plus 52			
		—30 to +3 DB plus 66			

REF. NO.	QUAN.	FUNCTION	TRIPLETT PART NO.
B1	1	Ohmmeter Battery	T-2426-2
B2	1	Ohmmeter Battery	T-37-16
C	1	Output Ranges	T-2631-P8
M	1	Indication	T-52-416
R1	1	Shunt 1000 DCMA	T-2603-C-.263
R2	1	Shunt 100 DCMA	T-2603-C-2.63
R3	1	Shunt 10 DCMA	T-2603-C-26.31
R4	1	Shunt 1 DCMA	T-2603-C-263.1
R5	1	Ohmmeter Series	T-15-1165
R6	1	Ohmmeter Series	T-2603-C-105
R7	1	10 Volts	T-15-1166
R8	1	50 Volts	T-15-1167
R9	1	250 Volts	T-15-1168
R10	1	1000 Volts	T-15-1006
R11	1	Ohmmeter Shunt	T-2603-C-1120
R12	1	Ohmmeter Shunt	T-2603-C-11
R13	1	Ohmmeter Zero Adj	T-16-24
R14	1	Ohmmeter Series	T-15-1169
R15	1	DC Calibrating 1000 ohm/V	T-2603-1-5000
R16	1	2.5V DC	T-15-1170
R17	1	2.5V DC	T-15-1134
R18	1	Rectifier Shunt	T-2603-C-6000
R19	1	Rectifier Series	T-15-1170
R20	1	2.5V AC	T-2603-C-10700
R21 R22	2	5000 Volts	T-15-973
R23	1	Shunt 10A DC	T-90-164
S1	1	Range Switch	T-22-78
S2	1	Circuit Switch	T-22-80
X	1	AC Rectifier	8679
	1	Tester Housing	T-10-599
	2	Connections	T-2563-A
	2	Connections	T-33-13
	2	Connections	T-33-12
	2	Switch Knobs	5804
	1	Ohms Adj. Knob	T-2558-1
	1 Pr.	Connections	T-79-15

*Approx. Value Calibration Resistor

PARTS 625-NA

PART NAME	DESCRIPTION
Battery	1.5V Eveready 935 or equivalent
Battery	15V Eveready 411 or equivalent
Capacitor	.1 Mfd 600 DCWV, paper
Instrument	50 Ua, 250 MV with panel
Resistor	.263* ohm wirewound 1W
Resistor	2.63* ohm wirewound 1W
Resistor	26.31* ohm wirewound 1W
Resistor	263.1* ohm wirewound 1W
Resistor	210K ohm ±1% Carbofilm ½W
Resistor	105* ohm Wirewound 1W
Resistor	75K ohm ±1% Carbofilm ½W
Resistor	400K ohm ±1% Carbofilm ½W
Resistor	2 Megohm ±1% Carbofilm ½W
Resistor	7.5 Megohm ±1% Carbofilm 1W
Resistor	1120* ohm wirewound 1W
Resistor	11* ohm wirewound 1W
Resistor	20K ohm Variable
Resistor	16K ohm ±1% Carbofilm ½W
Resistor	5K ohm ±1% Wirewound 1W
Resistor	20K ohm ±1% Carbofilm ½W
Resistor	2500 ohm ±1% Carbofilm ½W
Resistor	6000* ohm Wirewound 1W
Resistor	20K ohm ±1% Carbofilm ½W
Resistor	10700* ohm Wirewound 1W
Resistor	20 Megohm ±1% Carbofilm 1W
Shunt	10 Amp 250 MV Strip type
Switch	14 Pos. 4 Deck Cutoff
Switch	14 Pos. 2 Deck 4 Pole 4 Throw
Rectifier	Copper Oxide, Conant BT-160 3 Lead
Case	Bakelite with strap handle
Clip	Alligator, Mueller No. 60
Jack	Red for banana plug
Jack	Black for banana plug
Knob	Bar 1¼" long
Knob	Round 11/16 OD
Leads	Banana plug type



MODEL 625-NA WIRING DIAGRAM

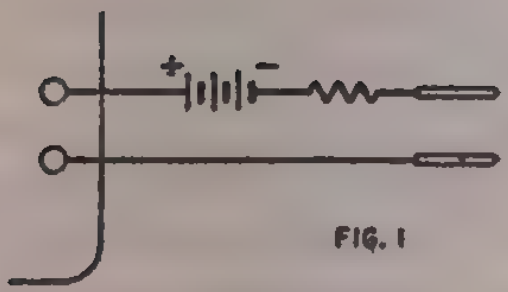


FIG. 1

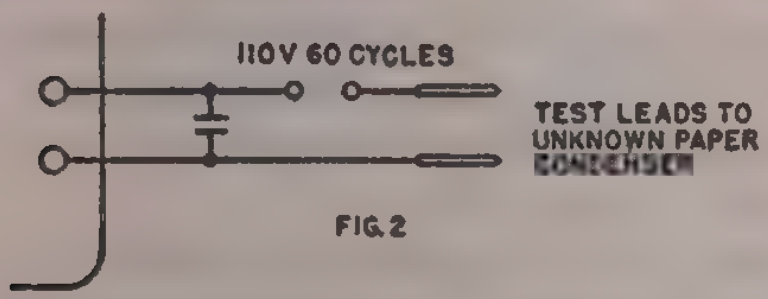


FIG. 2

MODEL 625-NA EXTERNAL CONNECTIONS

RMA STANDARD WARRANTY
Approved October 15, 1947

1. We warrant all products manufactured or sold by us to be free from defects in materials and workmanship. This warranty is limited to repairing or replacing any of said products which prove to be defective upon our inspection, and which are within the warranty period of twelve months from the date of our delivery.
2. Products claimed to be defective may be returned to us after written permission is given by us. When material is returned, it must be properly packed and shipped with transportation prepaid. If upon inspection the equipment is found defective, credit will be given to offset the prepaid transportation.
3. This warranty does not extend to any products which have been subjected to abuse, accident, improper installation or application, alteration or negligence in use, storage, transportation or handling.
4. The failure to return the merchandise within the period specified in Paragraph One shall constitute a final acceptance of the merchandise and conclusively operate as a fulfillment of all warranties, expressed or implied.

5. This warranty excludes all oral or other and implied warranties, and the manufacturer shall in no event be liable for damages for a breach of warranty in an amount exceeding the purchase price of the alleged defective equipment.

RMA STANDARD WARRANTY FOR MAINTAINING PARTS OF DISCONTINUED MODELS

Standard warranty adopted by the instrument and test equipment section of the RMA parts division for maintaining parts of discontinued models.

The Triplett Electrical Instrument Company warrants this equipment under the standard warranty of the instrument section of the RMA Parts Division. Parts will be made available for a minimum period of five (5) years after the manufacture of this equipment has been discontinued.

Parts include all materials, charts, instructions, diagrams, accessories, etc., which have been furnished in the Standard Model.

The Triplett Electrical Instrument Co.
BLUFFTON, OHIO

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THE TRIPLETT ELECTRICAL INSTRUMENT CO.
BLUFFTON, OHIO